

Species

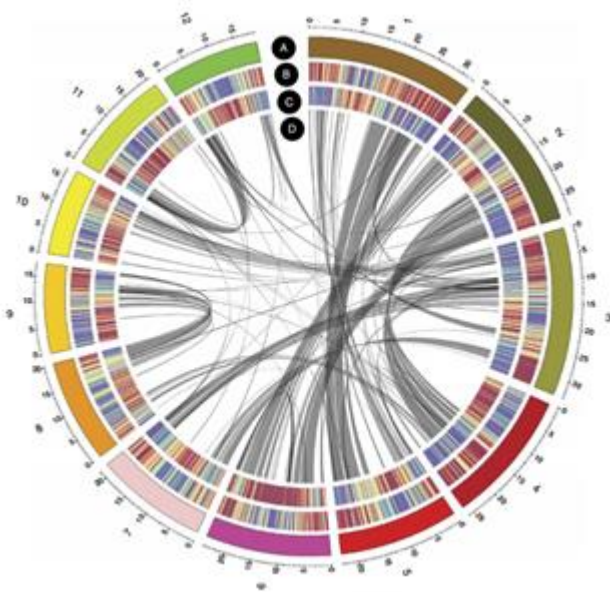
The genome sequence of African rice (*Oryza glaberrima*)

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Oryza glaberrima (African rice) is a cultivated grain distinct from its better known cousin *Oryza sativa* (Asian rice). African rice was independently domesticated ~3000 years ago in the Niger River Delta from its still extant progenitor, *Oryza barthii*. *O. glaberrima* is significant for its resistance to many pests and diseases and for its tolerance of drought and infertile soils. Interspecific crosses between African and Asian rice have produced cultivars with improved yield and quality traits, which have been adopted by many African countries to meet the growing need for rice as a staple food. *O. glaberrima* is well adapted for cultivation in West Africa and possesses traits for increased tolerance to biotic and abiotic stresses, including drought, soil acidity, iron and aluminum toxicity, as well as weed competitiveness. From a scientific perspective the genome of *O. glaberrima* provides insight into the genetic basis of domestication and other traits by finding commonalities and differences with *O. sativa*. Similar to Asian rice, African rice is a diploid A-type genome, having 12 chromosomes and an estimated size of ~358 Mbp. The genome sequence was generated and assembled by the Arizona Genomics Institute (AGI) using strain IRGC: 96717. The identification of protein coding gene models was based on consensus predictions derived from several types of evidence: ab initio gene finders, protein homology from finished plant genome projects and optimal spliced alignments of ESTs

and tentative consensus transcripts. The release of the *O. glaberrima* genome, its annotation and comparative population genomics data sets enables an unprecedented opportunity for the identification and utilization of adaptive traits that are important for rice agriculture, especially in West Africa, a region whose population is expected to grow rapidly over the next 50 years.

RESOURCE

1. Muhua Wang, Yeisoo Yu, Georg Haberer, Pradeep Reddy Marri, Chuanzhu Fan, Jose Luis Goicoechea, Andrea Zuccolo, Xiang Song, Dave Kudrna, Jetty S S Ammiraju1, Rosa Maria Cossu, Carlos Maldonado, Jinfeng Chen, Seunghee Lee, Nick Sisneros, Kristi de Baynast, Wolfgang Golser, Marina Wissotski, Woojin Kim, Paul Sanchez, Marie-

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